

**BROAD CREEK, JACKSON CREEK
AND FISHING BAY WATERSHEDS**
Middlesex County, Virginia

**APPLICATION FOR FEDERAL
NO DISCHARGE ZONE
DESIGNATION**



Submitted to U.S. Environmental Protection Agency Region III
By the Commonwealth of Virginia

INTRODUCTION

Broad Creek, Jackson Creek and Fishing Bay Watersheds No Discharge Zone Locations and Boundaries

Broad, Creek, Jackson Creek and Fishing Bay with its adjacent waters are located in the eastern-most portion of Middlesex County, Virginia. This area is known collectively as the community of Deltaville. Broad Creek discharges north to the Rappahannock River near its confluence with the Chesapeake Bay. Jackson Creek discharges east into the mouth of the Piankatank River, and Fishing Bay directly south to the Piankatank River. The Piankatank River discharges east to the Chesapeake Bay. These watersheds encompasses drainage areas of approximately 0.7 mi² for Broad Creek, 1.1 mi² for Jackson Creek and 1.6 mi² for Fishing Bay with Porpoise Cove and Moore Creek. These watersheds also have considerable shoreline with Broad Creek, having a shoreline of approximately 4 miles, Jackson Creek of 6 miles and Fishing Bay, Porpoise Cove and Moore Creek a combined shoreline of 8 miles. All of these water bodies are oligohaline and subject to the action of tides. Broad and Jackson Creeks are shallow with maintained channel depths of six (6) to ten (10) feet. Fishing Bay is a natural basin with depths that exceed 25 feet in the central portion and maintains depths of up to 15 feet within 40 yards of the surrounding shoreline in the western section. On the southwestern shoreline significant shoals rapidly decrease depths to less than 4 feet. Similar depths are found within 150 yards of the peninsula which terminates at Stove Point. Moore Creek is shallow with depths less than 5 feet and Porpoise Cove is a very small natural shallow embayment used as a marina with depths not exceeding 4 feet in most areas.

For the purpose of this application, the Broad Creek Watershed No Discharge Zone is defined as all contiguous waters south of the line formed between the points formed by Latitude 37°33'46.3"N and Longitude -76°18'45.9"W and north to Latitude 37°33'47.4"N and Longitude --76°19'24.7"W. The Jackson Creek Watershed No Discharge Zone is defined as all contiguous waters west of the of the line formed between the points formed by Latitude 37°32'40"N and Longitude -76°19'40.6"W at Stove Point Neck and Latitude 37°32'46.8"N and Longitude -76°19'15.6"W at the western point of the entrance to eastern Prong of Jackson Creek. The Fishing Bay Watershed No discharge Zone is defined as all contiguous waters north of the of the line formed between the points formed by Latitude 37°32'01.9"N and Longitude -76°21'43.5"W at the southernmost tip of Bland Point and Latitude 37°31'29.4"N and Longitude -76°19'53.6"W at the southernmost tip of Stove Point. This area includes all of Fishing Bay, and encompasses Moore Creek and Porpoise Cove. A location aerial photo for each No Discharge Zone is provided as Figures 1A through 1C.

Certification of Need

As indicated in "Resources and Environmental Issues" below, greater protection of the waters of the three Watersheds are required than provided by the currently applicable Federal regulations in order to protect this resource and to prevent additional water quality degradation with loss of beneficial uses. In accordance with 40 CFR §140.4(a), this application requests a determination by the U.S. Environmental Protection Agency (EPA) that adequate facilities for the safe and sanitary removal and treatment of sewage from vessels in the Broad Creek, Jackson Creek and Fishing Bay Watersheds are reasonably available, and approval of a No Discharge Zone for the above defined boundaries. The following pages describe the

Figure 1A

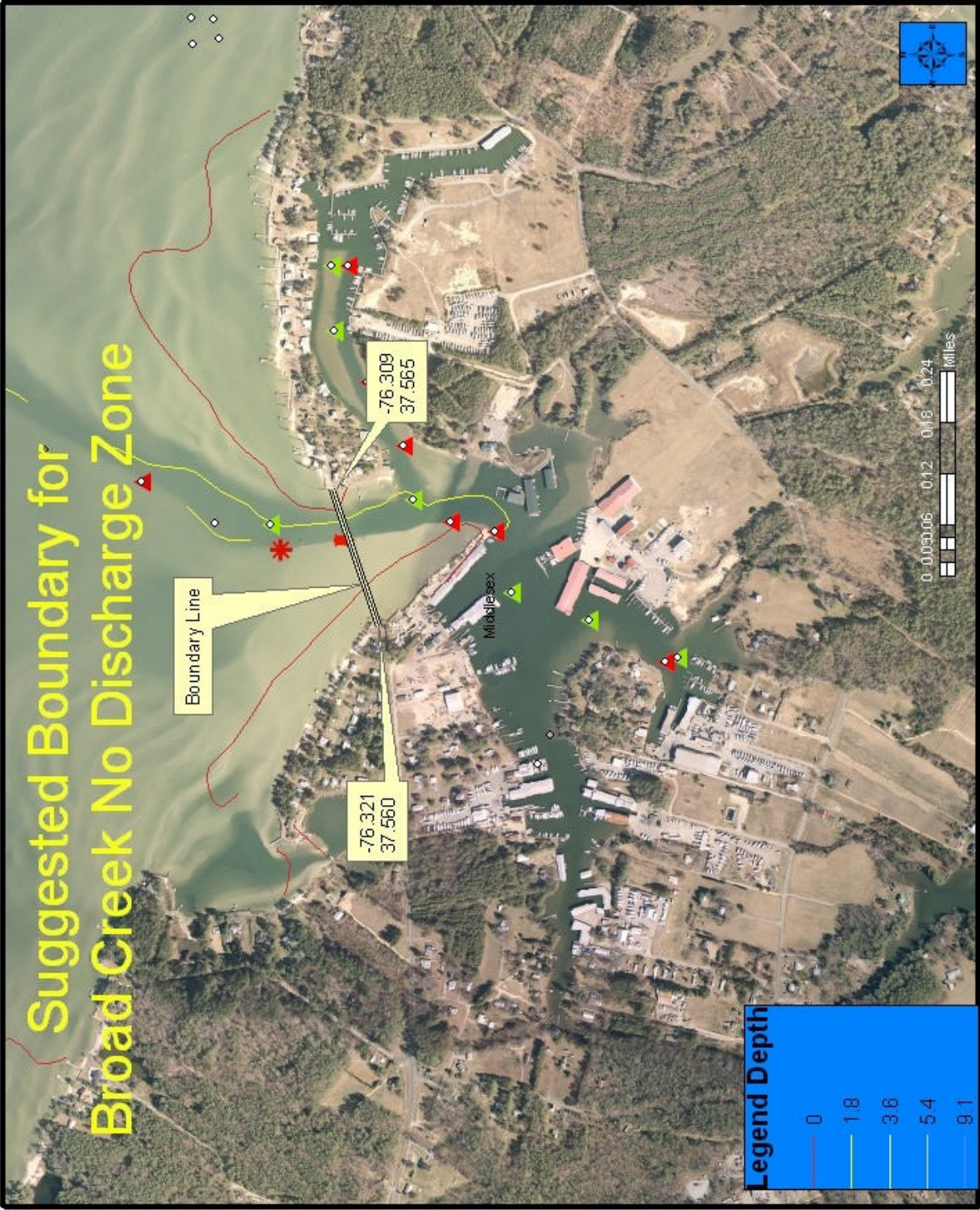


Figure 1B



Figure 1C.



environmental status of the watershed, document that adequate sewage removal facilities are available, and provide information as required by 40 CFR §140. Given approval from EPA, the Commonwealth of Virginia intends to prohibit all sewage discharges from vessels, whether treated or untreated, into the No Discharge Zones designated for Broad Creek, Jackson Creek and Fishing Bay and vicinity Watersheds.

RESOURCES AND ENVIRONMENTAL ISSUES

Broad Creek, Jackson Creek and Fishing Bay are minor tributaries to two major tributaries, the Rappahannock and Piankatank Rivers which in turn drain to the Chesapeake Bay, one of the largest estuarine systems and most important natural resources in the United States. Multitudes of people enjoy these waters for a variety of activities, including boating, fishing, shellfish harvest, crabbing, water skiing, and swimming. The community that encompasses the drainage of these three water bodies has a total of 1583 housing units, of which 824 are occupied year round. The remaining housing units are occupied during the warmer months as vacation homes or summer residences. The surrounding community also includes public access areas, thirty two (32) marinas, private piers with vessel slips, numerous vessel anchorages, boat launch facilities, and restaurants. These Creeks experience considerable utilization by transient recreational vessels for rest and re-fitting, anchorage, mooring, and other services while transiting the inter-coastal water way and Chesapeake Bay. Those who live on the river and those who visit enjoy the scenery, wildlife and water. Vessels of all sizes and types ply these waters including, sailing vessels, motor yachts, commercial tugs, fishing vessels, personal watercraft, canoes, kayaks, water skiers and swimmers enjoy the river for its recreational benefits. The full time resident population of 1716 people increases to several thousand during the warmer months as resident and transient vessel owners utilize the marinas and anchorages in the area. There are several waterfront access areas within in each of the three watersheds that are used year round for boating and fishing. The Rappahannock and Piankatank Rivers to which these waters empty are sites of commercial oyster harvest, clam harvest and locations for oyster reef sanctuaries. Considerable additional private oyster culture is engaged in by residents of Broad Creek, Jackson Creek and Fishing Bay utilizing floating cages.

Wildlife

The two Creeks and Fishing Bay are host to threatened, endangered, and rare species of plants and animals. More than 40 water dependent species with special management status utilize these waters. A list of these species is found in the Appendix. Bald Eagles and Osprey are regularly seen foraging in the waters of the Rappahannock River and Piankatank River and their minor tributaries. The headwaters of the Piankatank River, to which Fishing Bay and Jackson Creek Drain is Dragon Run the subject of a Special Area Management Plan that has been adopted by Middlesex County as an appendix to its Comprehensive Plan. The waters of the Rappahannock and Piankatank Rivers and their tributaries are historically known to accommodate migrating populations of Hickory and American shad, Striped Bass, Alewife, Yellow Perch, Shortnose Sturgeon and Atlantic Sturgeon, and other anadromous fish. Marine mammals represented by the Bottlenose Dolphin utilize these waters as do endangered Kemps-Ridley, Loggerhead and Green sea turtles. A Blue Heron nesting colony is located at Bland Point on the Piankatank which represents the western boundary of the Fishing Bay No Discharge Zone.

Water Quality Issues

The waters of Broad and Jackson Creek have been under varying levels of shellfish condemnation for more than 20 years. Recent years have seen increases in shoreline residential development, private vessel utilization, marina expansions and reconfigurations. Most marinas in the greater Deltaville areas actively participate in the Clean Marina Program and several marinas offer vessel pump outs free of charge. In addition the Virginia Department of Health (VDH) has begun requiring that more advanced septic systems be utilized for new construction and to replace systems that have failed. In spite of these efforts, monitoring data has identified bacteria water quality issues that have resulted in an increase in condemnations in Broad and Jackson Creeks, as well as portions of Fishing Bay, Porpoise Cove and Moore Creek. These have been listed

on the 303(d) List of Impaired Waters as impaired for bacterial contamination based on state water quality standards. Additionally all waters of the Chesapeake Bay and its tributaries are listed as impaired due to excess nutrients. The Illustrations in Figures 4 through 5 show the impaired shellfish waters within the three watersheds as of 2007. The 2006 Virginia Water Quality Assessment Integrated Report lists Broad Creek, Jackson Creek, Fishing Bay, Moore Creek and Porpoise Cove as requiring Total Maximum Daily Load (TMDL) development due dissolved oxygen, aquatic plant (macrophytes) and bacteria impairments due to fecal coliform and enterococci bacteria.

In 2005, EPA Region III and the Virginia State Water Control Board (SWCB) approved TMDLs for the shellfish harvest use impairments on Broad Creek, Jackson Creek and the lower Piankatank River prepared by the Virginia Department of Environmental Quality. The TMDL was submitted in accordance with Sections 303(d)(1)(c) and (2) of the Clean Water Act. The establishment of a No Discharge Zone has been listed as one of the states strategies for improving water quality in the Chesapeake Bay and is one of the strategies under the 2000 Chesapeake Bay Agreement and the Chesapeake Bay and Virginia Waters Clean-up Plan established under Virginia House Bill 1140. At the time of the Piankatank River TMDL, Fishing bay had been meeting the shellfish bacteria standard, Moore Creek and Porpoise Cove were also not listed as impaired. Conditions in these waters have since deteriorated and new areas are now listed as requiring TMDLs.

The Virginia Department of Health – Division of Shellfish Sanitation (VDH-DSS) operates an extensive bacteria monitoring network in these waters and other designated shellfish waters in the Commonwealth. Additionally DEQ maintains a long-standing monitoring program in Broad Creek, the Piankatank River and Rappahannock River. Parameters measured include chemical and bacteriological data that are analyzed at fixed stations. The VDH-DSS monitoring has revealed that Broad Creek, Jackson Creek, Fishing Bay, Moore Creek and Porpoise Cove routinely fail to meet the shellfish water quality standard with many areas under seasonal or annual condemnations. All waters are listed as impaired for aquatic plants (macrophytes). Porpoise Cove, Fishing Bay and Broad Creek are also listed as impaired in the 2006 Water Quality Assessment for Dissolved Oxygen. Broad Creek also shows an impaired primary contact (swimming) designated use under the enterococci bacteria standard.

Although many sources potentially contribute to declining water quality in these waters, it can be assumed that discharges from vessels, anchored, docked, moored or operating within them contribute the overall bacterial load and the dissolved oxygen impairments. Even treated sanitary wastewater discharged from boats is relatively concentrated, having fecal coliform counts ranging from 200 to more than 1,000 Most Probable Number (MPN) per 100 milliliters of water. These Marine Sanitation Devices do not provide any treatment for chemical or biological oxygen demand, phosphorus or nitrogen. A summary of the chemical constituents of vessel sewage measured in a typical recreational vessel holding tank is shown in Table 1. Marine vessel wastewater discharges also contain other pollutants such as viruses and deodorant chemicals that are potentially harmful to humans, wildlife, and the environment and can lead to a variety of environmental ills.

Table 1. Chemical Constituents Measured in Vessel Sanitary Holding Tanks

Chemical Procedure	Unit	Result	Report Limit
BOD	mg/l	2,800	2
COD	mg/l	5,000	25
TKN	mg/l	2290	.50
Total P	mg/l	113	.20
Fecal Coliform	FC/100 ml	29,000,000	ND

Source: Lynnhaven Boat Wastewater Sampling Program. January 7, 2008

Shellfish

The current shellfish standard for fecal coliform bacteria allows for a maximum 30 month geometric mean of 14 per 100 milliliters (ml) of water and a 90th percentile not to exceed 49 MPN/100ml. Under this standard the water quality data from VDH-DSS monitoring indicates that significant areas of Broad Creek and Jackson Creek in shellfish growing area 33 and Fishing Bay and associated tributary waters to the Piankatank River in shellfish growing area 34 failed to meet the National Shellfish Sanitation Standard for fecal coliform bacteria. Both Broad Creek and Jackson Creek were listed as impaired for shellfish use due to fecal coliform bacteria under Virginia's 303(d) List of impaired waters. Both watersheds have completed TMDL reports for this pollutant. Fishing Bay is seasonally impaired due to high summer boating activity associated with its sheltered anchorage and marinas. Its associated waters of Porpoise Cove and Moore Creek have been recently condemned due to water quality impairments from fecal bacteria.

Condemnation under the DSS classification means it is "unlawful for any person, firm, or corporation to take shellfish from these sections for any purpose, except by permit granted by the Marine Resources Commission, as provided in Section 28.2-810 of the Code of Virginia". The condemnation is put into effect based on the potential threat to human health resulting from contaminated shellfish consumption.

Shellfish closures to the waters in the designated No Discharge areas have varied in size and extent from year to year for more than 20 years due to variable precipitation driven runoff from the land surface. Trends over the past decade have shown that bacteria levels in these waters are increasing resulting in expanded shellfish condemnations. This is in part due to increased residential shoreline development with their attendant dependence in this area on conventional septic systems and increased boating activity.

The most current available shellfish condemnations issued by VDH show that as of December 30, 2005, DSS has condemned Broad Creek with the exception of a small portion at the mouth which exhibits only a seasonal restriction on harvest (Figure 4). Other areas of Broad Creek are classified as prohibited, the most restrictive shellfish classification which bans all harvest. This is due to the heavy concentrations of boat yards, large concentrations of vessels and small boat yard permitted point source sanitary discharges. On 27 December 2007 Jackson Creek had shown some improvement and the identified condemnation on its easternmost portion was eased to a seasonal restriction though large areas of the Creek remain closed to harvest (Figure 5). On the 6th of October of 2006 condemnations due to fecal coliform bacteria were increased in Porpoise Cove and Moore Creek, and new buffer areas were extended into the Piankatank River including seasonal restrictions on shellfish harvest. Fishing Bay received an increase in the area of its seasonal harvest restriction (Figure 6).

Figure 4 Shellfish Condemnations – Broad Creek

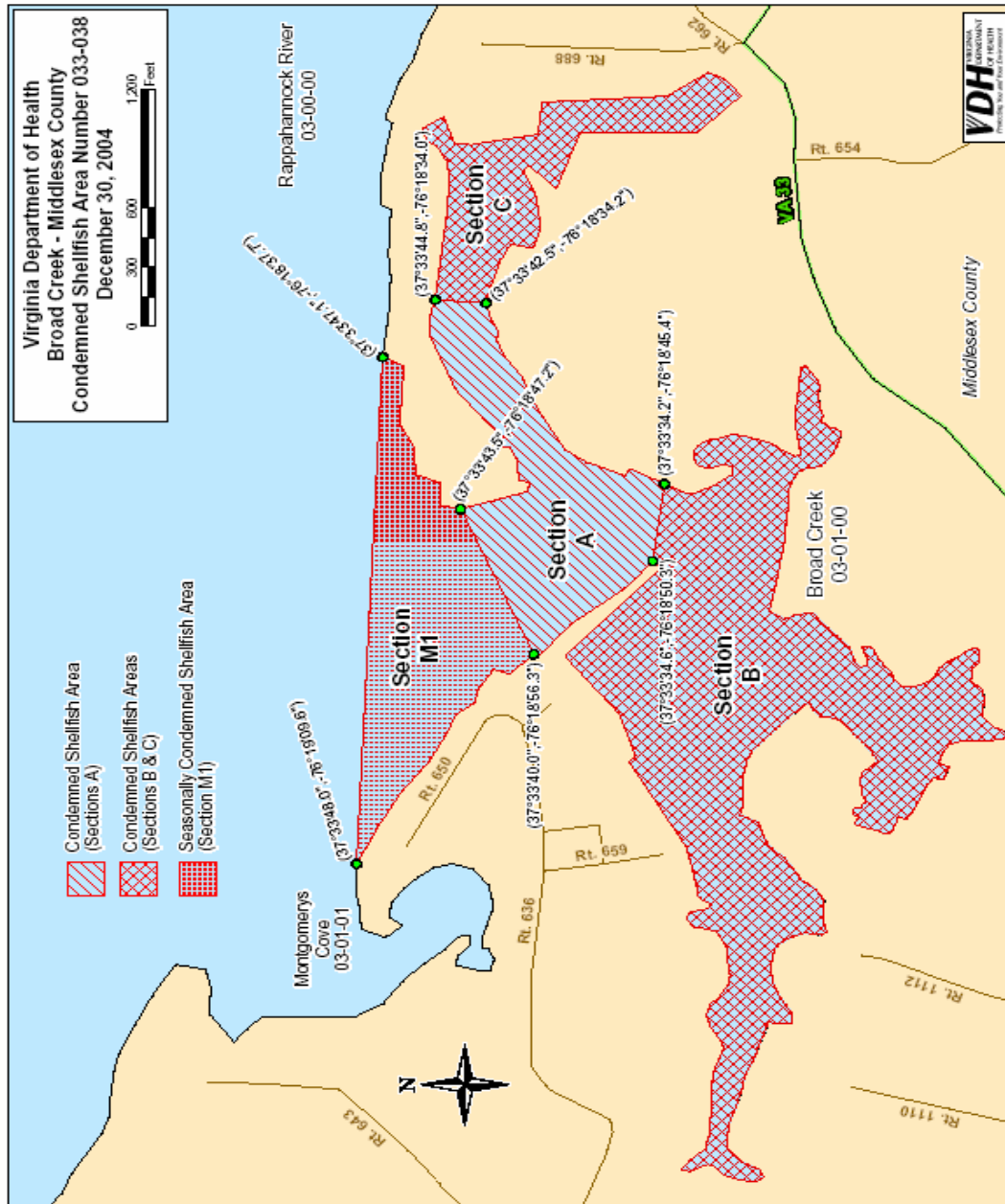


Figure 5 Shellfish Condemnations – Jackson Creek

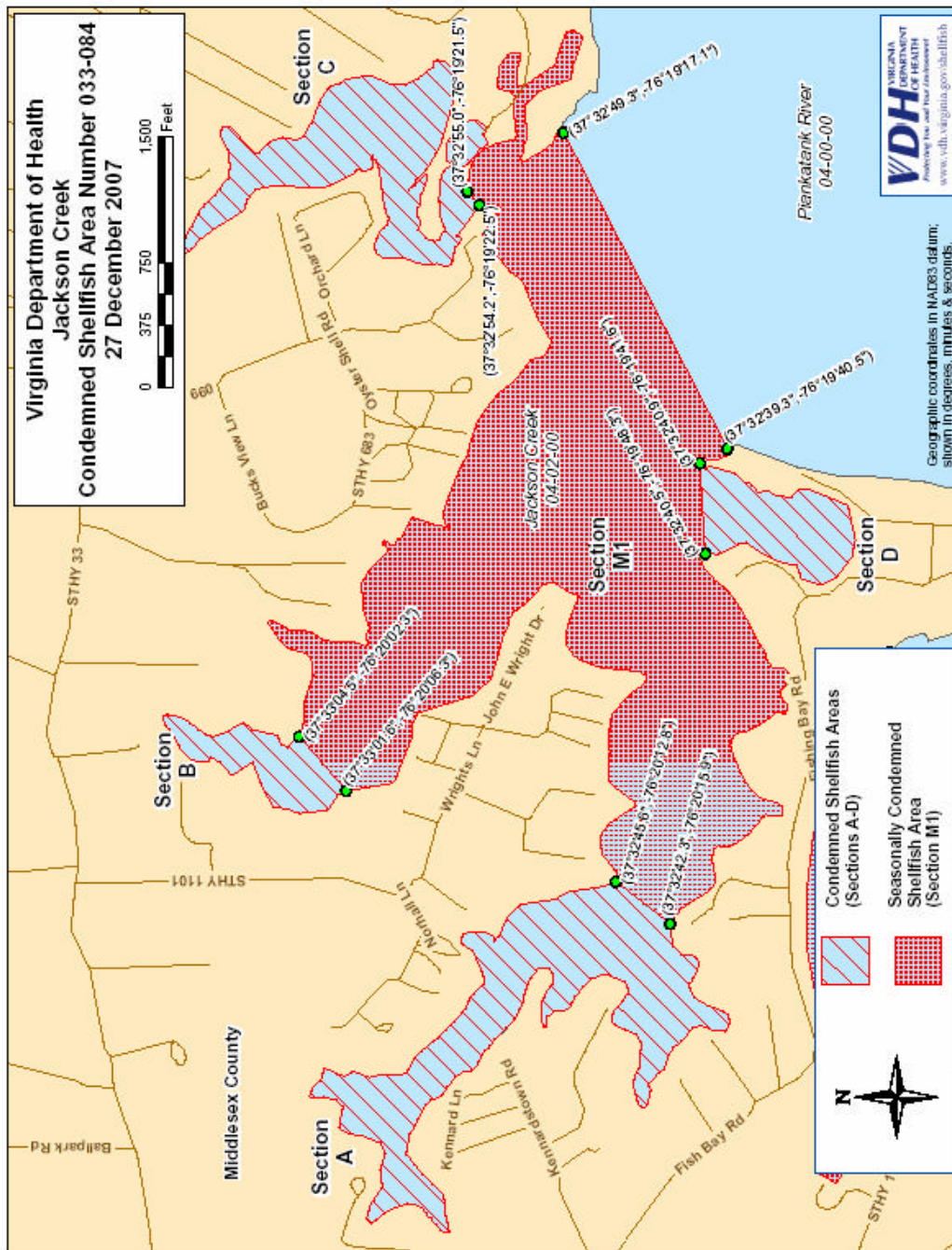
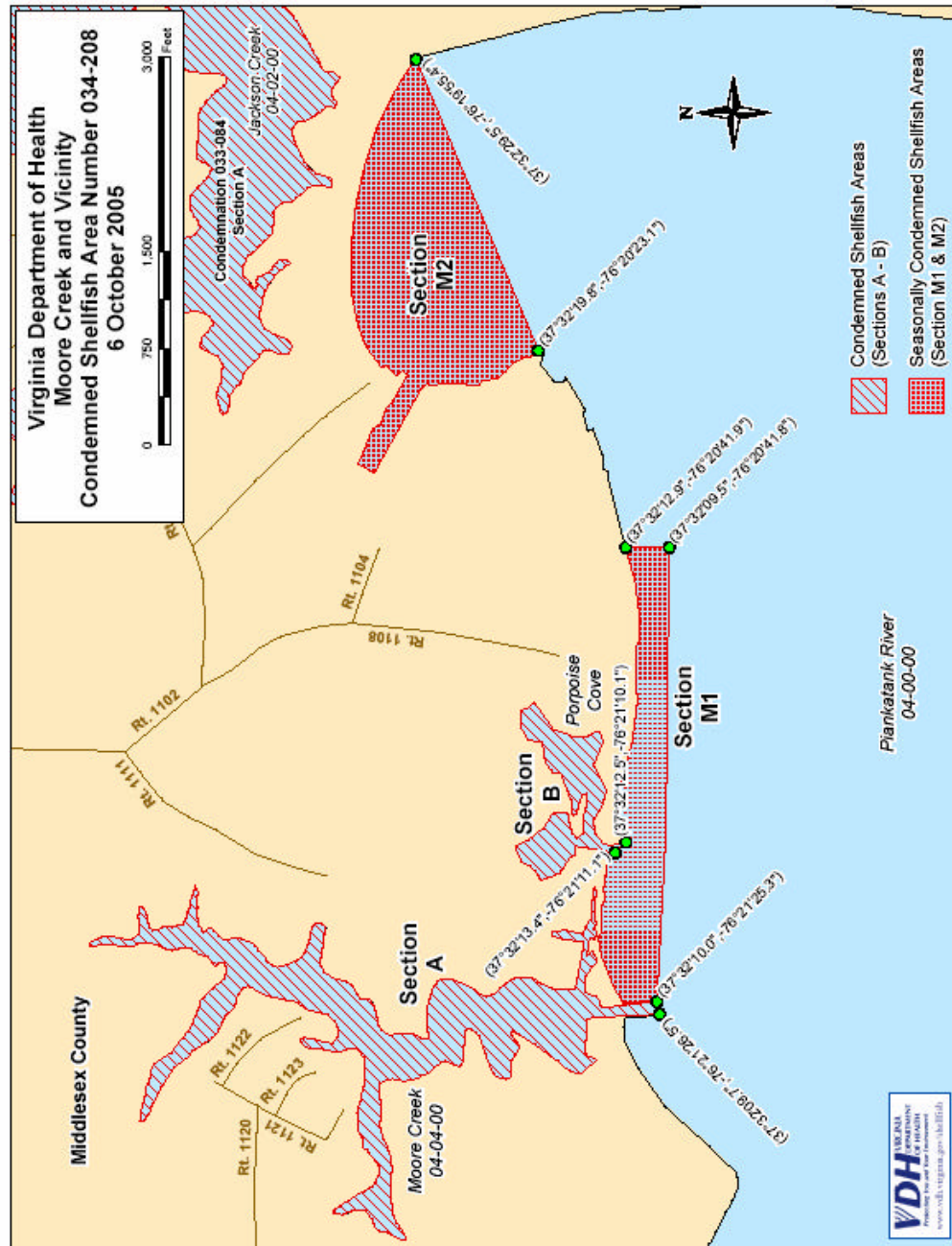


Figure 6 Shellfish Condemnations – Fishing Bay, Porpoise Cove and Moore Creek



SEWAGE PUMP-OUT FACILITY INFORMATION

Available Facilities

The Virginia Department of Health (VDH) ensures that proper sanitary facilities are present at marinas. Standards are set forth in the Commonwealth of Virginia Sanitary Regulations for Marinas and Boat Moorings, and marina facilities are inspected annually by VDH for compliance with the regulations.

Maps of sanitary waste reception facilities are provided in Figures 7 through 9. Of a total of eighteen (18) marinas in Broad Creek there are currently nine (9) waterfront marinas operating ten (10) sanitary pump-outs. The remaining nine (9) marinas in Broad Creek have no pump out facilities but seven (7) offer sanitary restroom facilities. In Jackson Creek there are five (5) marinas operating six (6) sanitary sewage pump out and dump station facilities. The remaining four (4) marinas in Jackson Creek have no pump out facilities but three (3) offer sanitary restroom facilities. Within proposed Fishing Bay No Discharge Zone there are two (2) sewage pump-out stations installed and one (1) sewage pump-out station under contract or construction in Porpoise Cove. All of these facilities also provide dump stations, restrooms, and informational signage.

The following provides a brief overview of the marina facilities located in the Broad Creek, Jackson Creek, Fishing Bay, and Porpoise Cove including Moore Creek.

Broad Creek:

- **Walden Brothers Marina.** This marina is located at 1124 Timberneck Road in Deltaville, Virginia on the west side of Broad Creek, at the terminus of Timberneck Road at the creek. The marina currently operates a dump station, sewage holding tank pump out and provides restroom facilities. The pump-out system located on the fuel dock is accessible to all boaters. There is a sign on the pump station. The marina has 63 seasonal slips/moorings available, 6 transient slips, 15 dry storage facilities, dump station, restrooms, fuel, water, electricity, solid waste containers and repair facilities.
- **Bay Marine.** This marina is located at 1134 Timberneck Road in Deltaville, Virginia on the west side of Broad Creek immediately adjacent to Walden Brothers Marina. The marina currently operates a sewage pump-out system, a dump station, and provides public restroom facilities. The facility also operates a Class II, package waste water treatment facility with a 5000 gallon holding tank used as a flow equalization basin. The facility operates under Virginia Pollution Discharge Elimination System Permit (VPDES) # VA0087173. The facility has 60 seasonal slips/moorings, many of which are occupied by aqua lodges (houseboats). Dump station, fuel, electricity, fuel, water, repair, solid waste containers and restrooms are also on site.

- **Norton's Marina.** This marina is located at the terminus of 97 Marina Drive in Deltaville, Virginia along the west side of Broad Creek and is upstream of Bay Marine. The marina currently operates a holding tank pump-out system at the fuel dock accessible to all boaters. There is a sign for the pump-out posted on the dock and on the building face. The marina also provides rest room facilities, solid waste containers, fuel, electricity, and repair facilities. There are 42 seasonal slips/moorings on site.
- **Timberneck Marina.** This marina is located at 970 Timberneck Road in Deltaville, Virginia along the west side of Broad Creek immediately adjacent to Norton's Marina. The marina has 35 seasonal slips/moorings and provides fuel, electricity, water, repair, and solid waste container. The marina currently has a pump out station located at the terminus of its dock at Broad Creek.
- **Broad Creek Marina.** This marina is located at 926 Timberneck Road in Deltaville, Virginia on the west side of Broad Creek and is immediately adjacent to Timberneck Marina. The marina has 20 seasonal slips/moorings. The marina currently operates a holding tank pump-out system, dump station and restroom facilities accessible to all boaters. Electricity, water and solid waste containers are also provided. There is a sign posted on the pump station.
- **Walter's Marina.** This marina is located at 137 Hamble Lane in Deltaville, Virginia on the west side of Broad Creek immediately adjacent to Broad Creek Marina. The marina currently offers electricity, water, solid waste containers, restroom facilities and a dump station. The marina is managed as a bed and breakfast and serves a maximum of 12 vessels.
- **Chesapeake Cove Marina.** This marina is located at 170 Greens Cove Road in Deltaville, Virginia on the south side of Broad Creek near its upstream terminus. Available on site are 37 seasonal slips/moorings, fuel, electricity, water, repair, solid waste containers, dump station, holding tank pump-out facility and restrooms.
- **J&M Marine.** This is a marina is located at 161 Dockside Drive in Deltaville, Virginia on the south shore of Broad Creek's western branch adjacent to Chesapeake Cove Marina and Coastal Marine. Available on site are 50 seasonal slips/moorings, 17 dry storage spaces, boat ramp, repair, electricity, water, solid waste containers and restroom facilities.
- **Coastal Marine.** This marina is located at 160 Dockside Drive in Deltaville, Virginia on the south shore of Broad Creek's western branch adjacent to J and M Marine and Deltaville Yachting Center. The marina offers 12 seasonal slips/moorings, electricity, water, repair, solid waste containers and restroom facilities.
- **Deltaville Yachting Center.** This marina is located at 18355 General Puller Highway in Deltaville, Virginia on the south shore of Broad Creek's western branch adjacent to Coastal Marine and upstream of Norview Marina near the mouth of Broad Creek. Available on site are 80 seasonal slips/moorings, 4 transient slips, 190 dry storage spaces, fuel, electricity, water, repair, solid waste containers, two (2) sewage holding tank pump out stations, dump stations and restroom facilities.
- **Norview Marina.** This marina is located at 18691 General Puller Highway in Deltaville, Virginia on the east shore of Broad Creek, near the mouth, and adjacent to Regatta point Yacht Club. It is also across Broad Creek from Bay Marine and Walden Brothers Marina. Available on site are 110 seasonal slips/moorings, 188 dry storage spaces, boat ramp, fuel, electricity, water, repair, solid waste containers, sewage holding tank pump out station, dump station and restroom facilities.

- **Regatta Point Marina.** This marina is located at 137 Neptune Lane in Deltaville, Virginia on the east shore of near the mouth of Broad Creek. The marina offers 80 seasonal slips/moorings, electricity, water, solid waste containers, sewage holding tank pump out station, dump station and restroom facilities.
- **Stingray Point Marina.** This marina is located at 19167 General Puller Highway in Deltaville, Virginia on the eastern branch of Broad Creek, near the mouth, and adjacent to Regatta point Yacht Club. It is directly Broad Creek from Bay Marine and Walden Brothers Marina. Available on site are 178 seasonal slips/moorings, fuel, electricity, water, solid waste containers, sewage holding tank pump out station, dump station and restroom facilities.

Other Mooring Places on Broad Creek:

- **Batley's Seafood.** This private commercial facility is located at 63 Perry Lane off Timberneck Road in Deltaville, Virginia and is adjacent to Bay Marine on the east shore of Broad Creek near the mouth. Available on-site is electrical service.
- **Middlesex County Dock.** This public dock is located at the terminus of Timberneck Road and bisects Walden Brothers Marina in Deltaville Virginia at the mouth Broad Creek. Available on-site 2 transient slips/moorings.
- **James Kennedy.** This Private dock is located at 205 Greens Cove Road in Deltaville, Virginia at the headwaters of the western branch of Broad Creek. Available are 5 seasonal slips/moorings, electricity, water, solid waste containers, and restroom facilities.
- **Schroeder Yacht Systems,** This vessel storage and launch facility is located at 19047 General Puller Highway in Deltaville, Virginia at Stingray Point Marina. Available on-site are 180 dry storage spaces, ramp, electricity, water, repair, solid waste containers, 1 Port-a-john, and the use of restroom facilities located at Stingray Point Marina which is adjacent to this property (Note: This property is rented from Stingray Point Marina.)

Jackson Creek:

- **Harbour House.** This private marina is located at 499 Jackson Creek Road in Deltaville, Virginia at the mouth of Mill Creek where it meets Jackson Creek. Available on site are 22 seasonal slips/moorings, ramp, electricity, water, solid waste containers, restroom and sewage holding tank pump out facilities.
- **Jackson Creek Harbor Condominium.** This private marina is located at 237 Oyster Point Road in Deltaville, Virginia near the mouth of Jackson Creek where Mill Creek meets Jackson Creek. Available on-site are 36 seasonal slips/moorings, electricity, water, and restroom facilities.
- **Deltaville Marina.** This marina is located at 274 Bucksview Lane in Deltaville, Virginia. Available on-site are 79 seasonal slips/moorings, 10 transient slips/moorings, fuel, electricity, water, repair, solid waste containers, restroom, dump station, and two (2) sewage holding tank pump out facilities.

- **Powell's Marina.** This marina is located at 256 Kennardstown Road in Deltaville, Virginia. Available on-site are 43 seasonal slips/moorings, fuel, electricity, water, solid waste containers, restroom, dump station and sewage holding tank pump out facilities.
- **Fitzgerald Boat Basin.** This marina is located at 78 Summerlynn Road in Deltaville, Virginia. Available on-site are 22 seasonal slips/moorings, electricity, water, restroom, dump station, and sewage holding tank pump out facilities.
- **Little Snug Harbor.** This marina is located at 57 Snug Harbor Lane, Deltaville, Virginia. Available on-site are 27 seasonal slips/moorings, electricity, water, and restroom facilities. The property is owned and managed by Ruark Marinas Inc. located at 1102 Fishing Bay Road in Deltaville, Virginia.
- **Fishing Bay Yacht Club.** This private marina is located at 1525 Fishing Bay Road in Deltaville, Virginia and occupies a small embayment 1000 feet immediately west of Stove Point Neck on the southern branch of Jackson Creek. Available on-site are 80 seasonal slips/moorings, boat ramp, electricity, water, solid waste containers, restroom, dump station, and sewage holding tank pump out facilities.

Other Mooring Places on Jackson Creek

- **Cross Rip, Ltd. Campground,** This facility is located in the northwestern headwaters of the southern branch of Jackson Creek at 503 Cross Rip Road in Deltaville, Virginia. Available on-site are water, solid waste containers, restroom, and dump station facilities.
- **Harrow's Fishing Charters.** This private facility is located at 515 Lovers Lane in Deltaville, Virginia near the headwaters on the southern branch of Jackson Creek. It accommodates private fishing parties.

Fishing Bay:

- **Ruark's Marina.** This marina is located at 1102 Fishing Bay Road in Deltaville, Virginia at the north-west end of the Fishing Bay adjacent to Fishing Bay Trace and Fishing Bay Harbor Marina which lie immediately south. The marina currently operates a dump station and is under contract to install a peristaltic Edson pump-out system under the Clean Vessel Act Grant Program. The pump-out will be at the terminus of "A" dock and accessible to the public. The new pump out will have appropriate signage. On site are 72 slips/moorings, water, electricity, solid waste containers and restroom facilities.
- **Fishing Bay Trace.** This private marina is located on Route 1102 in Deltaville, Virginia adjacent to Ruark's Marina and across the inlet from Fishing Bay Harbor Marina. Available on the site are 12 slips/moorings. No dump station, solid waste, or pump out facilities are provided. Restrooms are available at Fishing Bay Harbor Marina which also has pump out facilities, a dump station and fuel facilities.
- **Fishing Bay Harbor Marina.** This marina is located at 519 Deagles Road in Deltaville, Virginia at the western shore of the Fishing Bay adjacent to Fishing Bay Trace and Chesapeake Marine Railway. Available on site are 106 slips/moorings, fuel water, electricity, solid waste containers, dump station, sanitary sewage pump out, and restroom facilities.

Porpoise Cove:

- **Porpoise Cove Marina.** This marina is located at the southern terminus of Porpoise Cove Road in Deltaville, Virginia in a small embayment called Porpoise Cove located on the north shore of the Piankatank River directly east of Bland Point and Moore Creek. This Cove is included in the shellfish growing area adjacent to Fishing Bay. Available on site are 21 slips/moorings, water, electricity, solid waste containers, and restroom facilities. The marina is also under contract with the VDH Marina Program to build a new pump out station.

Facility Accessibility & Restrictions

Tables 2 through 4 summarize information on marinas with sanitary sewage off loading capability including; location, schedule of operating hours, fees for pump-out facilities, water depth at pump-out dock, whether the pump-out was grant funded using Clean Vessel Act (CVA) funds, and the number of available slips. Table 2 summarizes this information for marinas in Broad Creek. Table 3 summarizes this information for marinas in Jackson Creek, and Table 4 for Fishing Bay. Maps of the available pump out facilities are provided in Figures 7 through 9.

Draft limitations vary by marina for vessels at pump-out facilities and dump stations in Broad and Jackson Creeks. Fishing Bay has sufficient depth for most recreational and small commercial vessels.

Each of the marinas in Tables 2 through 4 is open to the public except for the few private slips/moorings associated with bed and breakfasts and small communities. All private yacht clubs will allow pump outs at their facilities.

The facilities are more concentrated at Broad Creek and Jackson Creek where vessel utilization is the highest and in areas of protected anchorage. However, transient vessels enter all of the watersheds to anchor or dock, and most local vessels travel to the water body's facilities for fuel. This indicates that the grouping of facility locations does not appear to be an inconvenience.

Open, more exposed areas of these watersheds, and those areas with limited depth, become dominated by private residences. A survey of private piers, slips and vessels conducted within these creeks on February 12, 2008 found that there were a total of 89 private wet slips in Broad Creek with 54 occupied by vessels. Jackson creek had a total of 139 private wet slips with 78 occupied by vessels. Fishing Bay had 108 wet slips with 12 occupied by vessels. Porpoise Cove had 23 private wet slips with 8 occupied by vessels and Moore Creek had 79 total wet slips with 35 occupied by vessels. The high empty private slip count was without doubt due to vessels having been removed and placed in winter storage. This information is summarized in Table 6.

Facility Maintenance

The Commonwealth of Virginia Sanitary Regulations for Marinas and Boat Moorings specifies requirements for facility design and operation. Routine health department inspections and performance tests are performed to ensure that facilities are available and functioning properly. Broken pump-out stations can be reported by calling the VDH Marina Program.

Facility Waste Treatment Method

The Commonwealth of Virginia Sanitary Regulations for Marinas and Boat Moorings (12 VAC 5-570) address treatment of collected vessel sewage from pump-outs and dump stations. In compliance with these regulations, all wastes from marinas within Broad Creek, Jackson Creek and Fishing Bay are collected in and transported by haulers who deliver them to municipal waste treatment facilities or private facilities permitted under the Virginia Pollutant Elimination Discharge System for ultimate treatment and disposal.

Table 2. Marina Pump-out Facilities, Broad Creek

MARINA INFORMATION	HOURS OF OPERATION	FACILITY FEE	WATER DEPTH AT PUMPOUT	GRANT FUNDED PUMPOUT	NUMBER OF VESSELS SLIPS
4. Bay Marine/ Bay Ventura 1134 Timberneck Road Deltaville, VA 23043 (804) 815-8646 Latitude 37 5600166667 Longitude -76.3528	8am-4:30pm 7 days a week 12 months a year	\$10	6 ft.	No	38 seasonal slips Aqualodges
10. Broad Creek Marina 926 Timberneck Road Deltaville, VA 23043 (804) 776-6694 jblielmel@ci.poquoson.va.us Latitude 37.5587333333 Longitude -76.32143333	8am-5pm 7 days a week May-November	N/C	5 ft.	Yes	20 seasonal slips
18. Chesapeake Cove Marina 170 Green's Cove Road Deltaville, VA 23043 (804) 776-6855 Latitude 37.5581666667 Longitude -76.3223	8am-5pm 7 days a week April-December	\$5	5 ft.	Yes	45 seasonal slips
21. Deltaville Yachting Center 18355 General Puller Highway Deltaville, VA 23043 (804) 776-9898 info@dycboat.com Latitude 36 54.39101 Longitude 76 5.22001	8:00am-4:30pm 6 days a week March-November 2 pump-outs available	\$5	6 ft.	Yes	80 seasonal slips

Note: Numbers leading the marina name correspond to numbers on the map in Figure 7.

Table 2. Marina Pump-out Facilities, Broad Creek Continued

MARINA INFORMATION	HOURS OF OPERATION	FACILITY FEE	WATER DEPTH AT PUMPOUT	GRANT FUNDED PUMPOUT	NUMBER OF VESSEL SLIPS
7. Nortons Marina 97 Marina Drive Deltaville, VA 23043 (804) 776-9211 yachts@nortonyachts.com Latitude 37.559483333 Longitude -76.31961667	On request 7 days a week 12 months/year	\$10	7 ft.	No	42 seasonal slips
22. Norview Marina 18691 General Puller Highway Deltaville, VA 23043 (804) 776-6463 jnorviewmarina@norviewmarina.com Latitude 37.5578 Longitude -76.31451667	8am-6pm 7 days a week 12 months/year	\$5	6 ft.	Yes	110 seasonal slips
23. Regatta Point Yacht Club 137 Neptune Lane Deltaville, VA 23043 (804) 776-6711 information@doziermarine.com Latitude 37.5595166667 Longitude -76.31255	May 15- Sept. 15 7 days a week 8am-5pm	\$5	7ft.	Yes	60 seasonal slips 10 transient slips
25. Stingray Point Marina 19167 General Puller Highway Deltaville, VA 23043 (804) 776-7272 Latitude 37 5603 Longitude -76.43391667	8am-4:30pm 7 days a week March-November	\$5	6.5 ft.	Yes	178 seasonal slips
3. Walden Brothers Marina 1224 Timberneck Rd Deltaville, VA 23043 (804) 776-9440 Latitude 37.5604666667 Longitude -76.31608333	8am-5pm 7 days a week 12 Months/year	\$5	6 ft.	Yes	63 seasonal slips 6 transient slips
9. Timberneck Marina 970 Timberneck Road Deltaville, Virginia 23043 804-694-6127 nortonmarine@aol.com Latitude 37.559 Longitude -76.32025	8:00am to 4:30pm 6 days a week	\$10	6ft.	No	40 wet slips

Note: Numbers leading the marina name correspond to numbers on the map in Figure 7.

Table 3. Marina Pump-out Facilities, Jackson Creek

MARINA INFORMATION	HOURS OF OPERATION	FACILITY FEE	LOW WATER DEPTH	GRANT FUNDED PUMPOUT	NUMBER OF VESSEL SLIPS
45. Deltaville Marina 274 Bucksview lane Deltaville, VA 23043 (804) 776-8900 Latitude 37.5490166667 Longitude -76.32971667	8am-6pm 7 days a week March- December 2 pump-outs available	Free pump out	8 ft.	No	79 seasonal slips 0 transient slips
59. Fitzgerald Boat Basin 78 Summerlynn Drive Deltaville, VA 23043 (804) 776-7873 dasalesinc@verizon.net Latitude 37.5460833333 Longitude -76.34093333	7am-7pm 7 days a week April- November	\$5	8 ft.	Yes	22 Seasonal Slips
43. Harbor House 499 Jackson Creek Road Deltaville, VA 23043 (804) 843-2520 Latitude 37.5483833333 Longitude -76.32395	24 hours/day 7 days a week 12 months a year	N/C	4 ft.	Yes	19 seasonal slips
58. Powell's Marina 256 Kennardstown Road Deltaville, VA 23043 (301) 864-4232 Latitude 37.54795 Longitude -76.34075	8am-5pm 7 days a week 12 months/year	\$5	6 ft.	Yes	43 seasonal slips
65. Fishing Bay Yacht Club 1525 Fishing Bay Road Deltaville, VA 23043 (804) 776-9636 Latitude 37.5432166667 Longitude -76.33243333	April-October 7 days a week 24 hrs/day 12 months/year	N/C	5 ft.	No	80 seasonal slips

Note: Numbers leading the marina name correspond to numbers on the map in Figure 8.

Table 4: Marina Pump-out Facilities, Fishing Bay and Vicinity

MARINA INFORMATION	Water Body Location	HOURS OF OPERATION	FACILITY FEE	WATER DEPTH AT PUMPOUT	GRANT FUNDED PUMPOUT	NUMBER OF VESSELS SLIPS
3. Ruark Marinas Inc. 1102 Fishing Bay Road Deltaville, VA 23043 (804) Latitude 37.5414 Longitude -76.3416	Fishing Bay	Under Construction	\$5	>15ft.	Yes	64 seasonal slips
6. Fishing Bay Harbor Marina 519 Deagles Road Deltaville, VA 23043 (804) 776-6800 Latitude 37.5414001667 Longitude -76.3416835	Fishing Bay	8am-5pm 7 days a week April- December	\$5	>15ft.	Yes	101 seasonal slips 10 transient slips
11. Porpoise Cove Marina 376 Porpoise Cove Lane Deltaville, Virginia 23043 (804) 776-6029 Latitude 37.53716667 Longitude -76.3514	Porpoise Cove on the Piankatank River	Under Construction	\$5	5ft.	Yes	21 seasonal slips

Note: Numbers leading the marina name correspond to numbers on the map in Figure 9.

Figure 7
Pump out Station Locations in Broad Creek

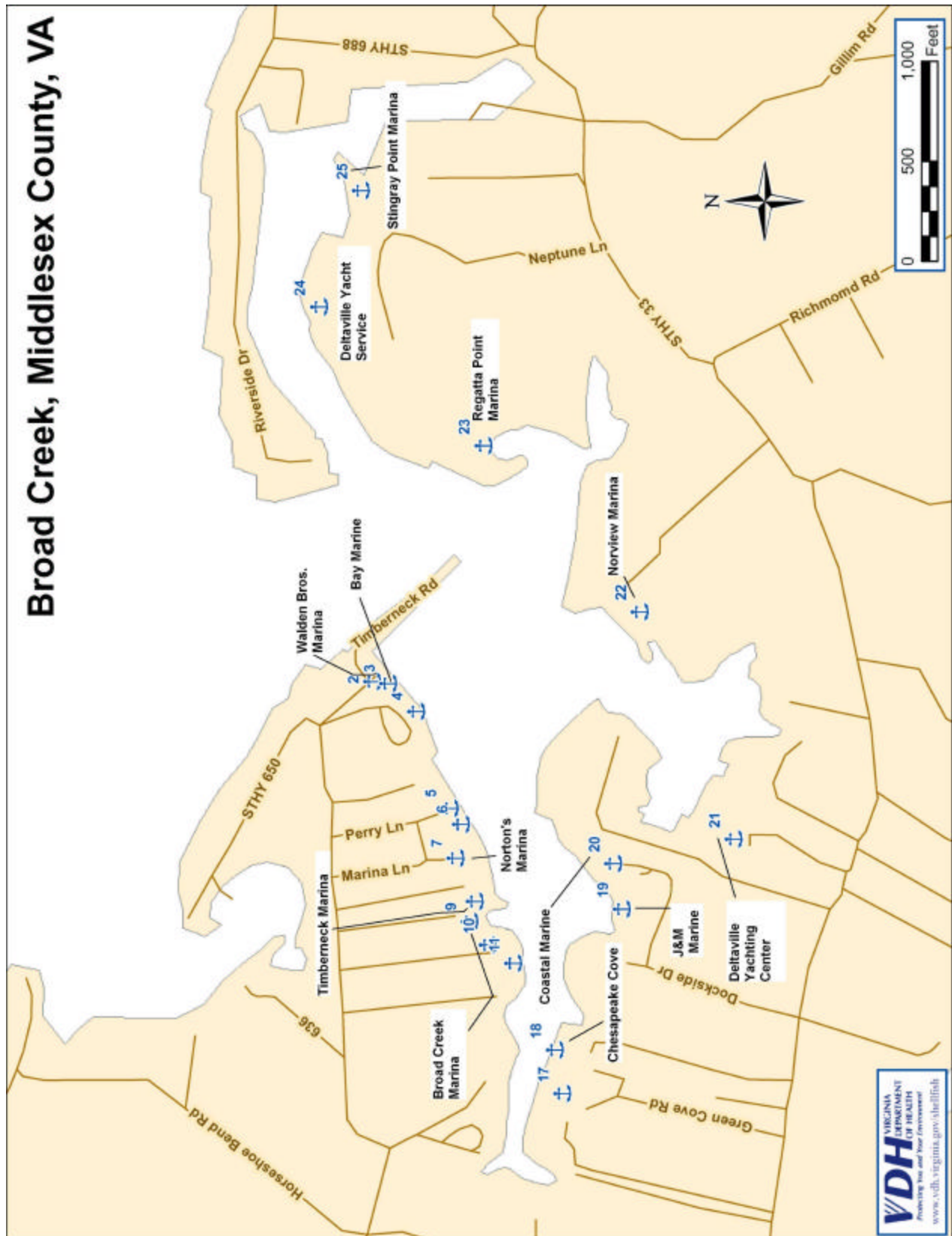


Figure 8
Pump out Station Locations in Jackson Creek

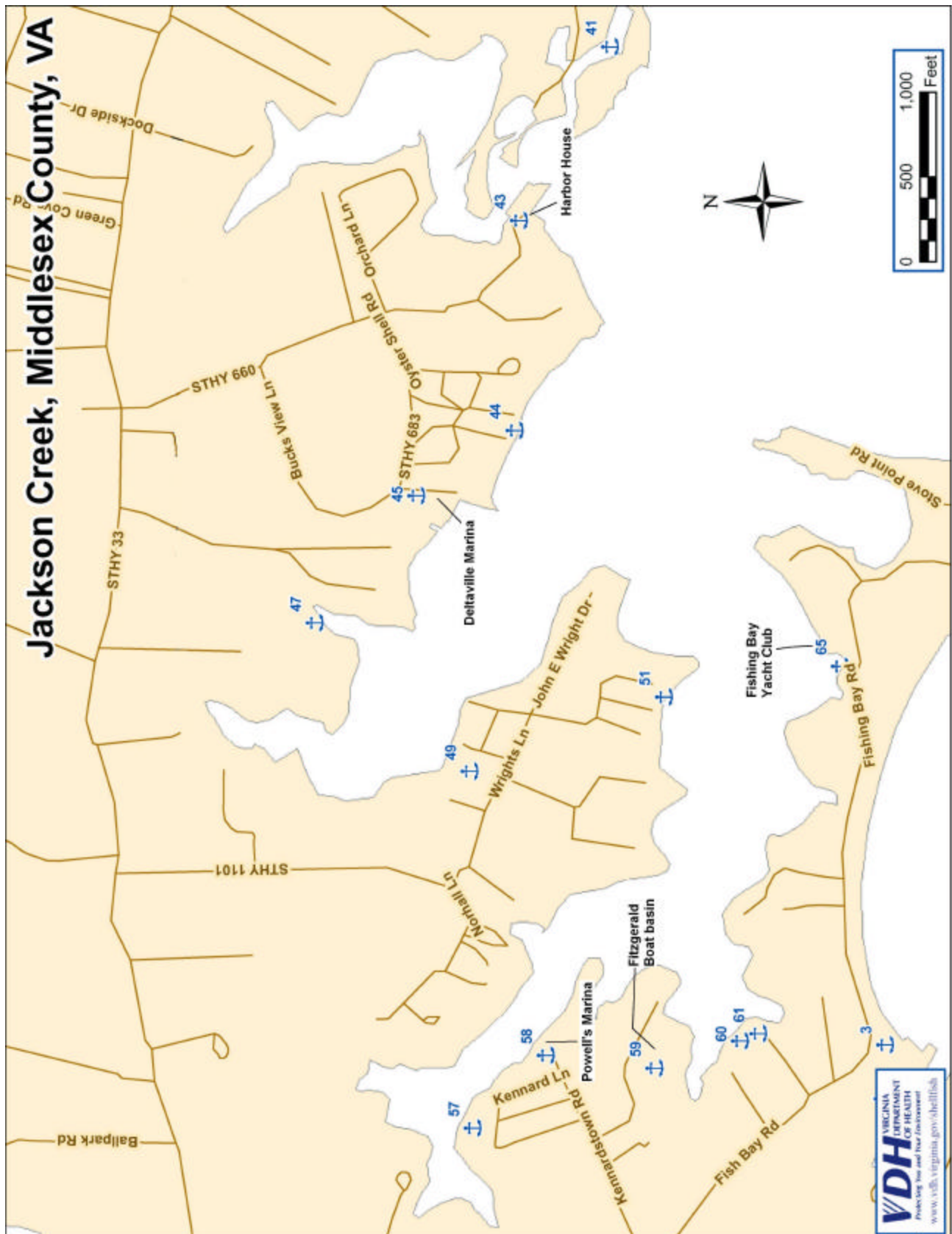
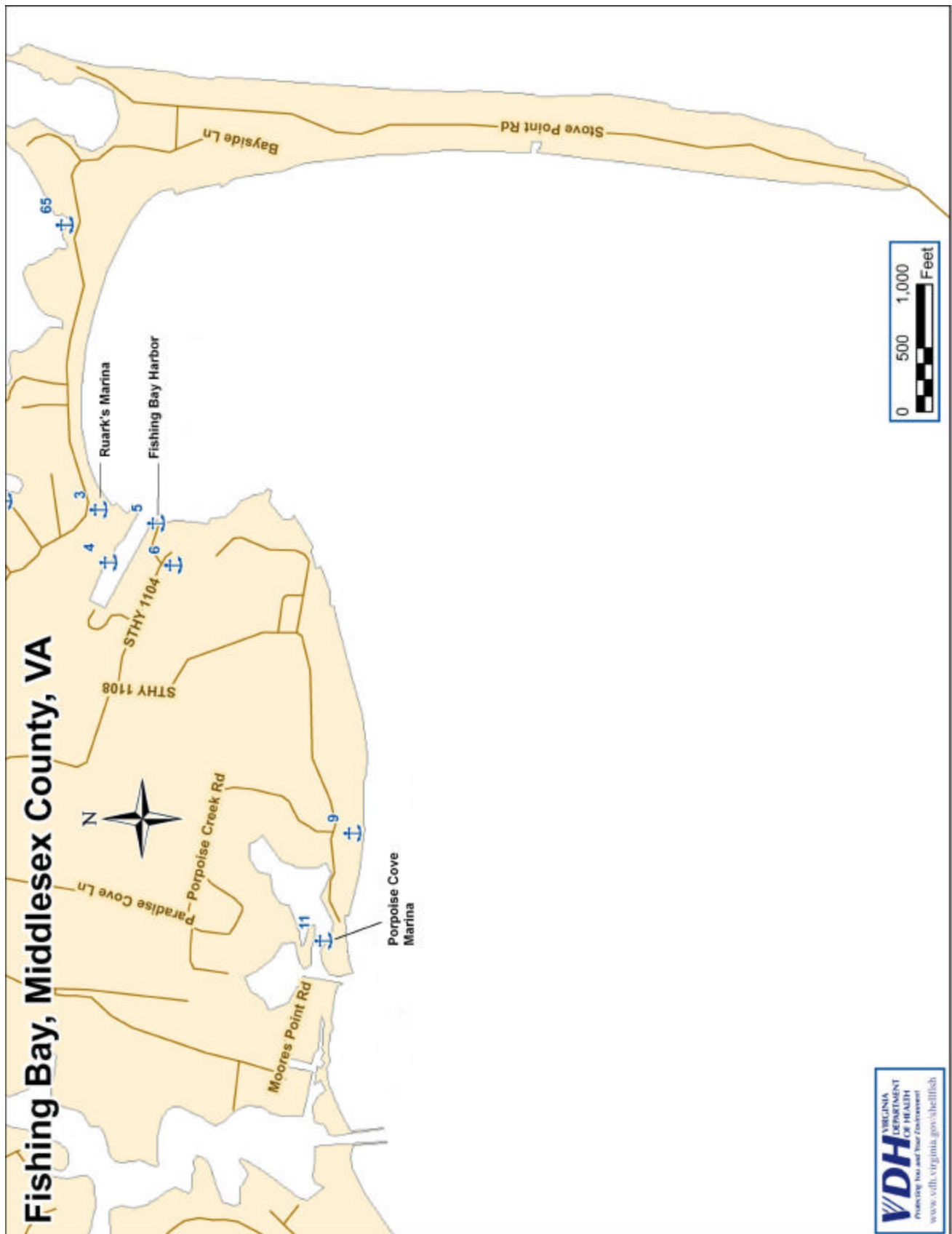


Figure 9
Pump out Station Locations in Fishing Bay



VESSEL INFORMATION VESSEL INFORMATION AND REQUIRED FACILITIES

The Broad Creek, Jackson Creek and Fishing Bay Area are primarily a recreational boating area with limited commercial vessel traffic (commercial crabbers and oysterman, charter fishing boats, U.S. Coast Guard vessels, Virginia Marine Resources Commission Patrol vessels). Thirty-two (32) percent of the boats in the area are less than twenty-seven (27) feet in length. Table 5 summarizes, by size, all boats registered in Deltaville or with a documented homeport of Broad Creek, Fishing Bay, Jackson Creek or adjacent harborages in Deltaville.

Table 5. Vessel Population in Deltaville

VESSEL LENGTH	TOTAL NUMBER OF REGISTERED VESSELS		
	Registered	Documented	Total
Less than 16 feet	171	0	172
16 to 26 feet	331	0	331
27 to 40 feet	46	50	96
Over 40 feet	3	30	33
TOTAL	551	80	631

Sources: Va. Dept. of Game and Inland Fisheries Boater. Marina Estimates.

Table 6 indicates the number of vessels, as determined by VDH and DEQ field reconnaissance that are kept at marinas or private waterfront homes with piers. Transient boats registered in other states and other cities in Virginia are not included in Table 5 or Table 6. Where vacant slips were noted, they were proportionally allocated to a vessel class based upon known numbers of vessels in that class within the watershed as a percentage of the total.

Table 6. Vessel Population in Broad Creek, Jackson Creek, Fishing Bay and Vicinity

VESSEL LENGTH	NUMBER OF VESSELS AT MARINAS, PRIVATE DOCKS, AND PIERS				
	Broad Creek	Jackson Creek	Fishing Bay	Porpoise Cove	Moore Creek
Less than 26 feet	107	106	67	22	72
Over 26 feet	637	297	231	21	7
Over 40 feet	11	13	15	0	0
TOTAL	755	416	313	43	79

Sources: Virginia Department of Health Marina Inspection Forms. VDH and DEQ field reconnaissance survey 02/12/2008.

The VDH marina inspection slip counts indicate sixteen (16) of six hundred ninety-two wet slips at commercial marinas in Broad Creek, ten (10) of two hundred forty-four (244) wet slips at commercial marinas in Jackson Creek and ten (10) of one hundred ninety-six (196) wet slips at commercial marinas in Fishing Bay and Porpoise Cove are designated as transient vessel slips. Moore Creek is a residential area with no commercial marinas and therefore no designated commercial transient slips. Based on this information, it is assumed that most transient vessels enter these waters while making passage through the Chesapeake Bay and adjacent tributary rivers. Most of these vessels would be of a size expected to have a holding tank. Transient vessel counts have been estimated based on boat information given by the operators of the eighteen (18) marinas in the Broad Creek, the five (5) marinas in Jackson Creek and the four (4) marinas in the waters of Fishing Bay and Porpoise Cove. It is estimated that, on a daily basis during the peak season, the marinas of Broad Creek experience a combined use by a total of 34 boats less than sixteen (16) feet long, 73 boats between sixteen (16) and twenty-six (26) feet long, and 637 boats between twenty-seven (27) and 11 boats (40) feet long. Jackson Creek may on a daily basis during the peak season experience a combined are use by a total of 34 boats less than sixteen (16) feet long, 72 boats between sixteen (16) and twenty-six (26) feet long, and 297 boats between twenty-seven (27) and 13 over forty (40) feet long. Fishing Bay and Porpoise Cove marinas may on a daily basis during the peak season experience a combined are use by a total of 28 boats less than sixteen (16) feet long, 61 boats between sixteen (16) and twenty-six (26) feet long, and 231 boats between twenty-seven (27) and forty (40) feet long, and 15 over 40 (forty) feet long.

Table 7 shows the number of vessels estimated to be operating in the Broad Creek, Jackson Creek and Fishing Bay Area watersheds based on Middlesex County registrations (Table 3) plus the estimated number of boats operating in other Deltaville area watersheds. These numbers are based on marina and private slip counts (Table 4). Table 5 also shows the number of transient boats expected to be operating in the watershed on a given day. For the purposes of estimating vessel numbers less than 16 feet in length, the size class of "less than 26" feet was multiplied 32%. This is the known percentage of vessels registered as "less than 16 feet" known to be in the Deltaville community. The resulting number was subtracted from the "less than 26 feet" class in Table 3 to provide the less than 16 feet class in Table 5 with the remainder being assigned to the "16 to 26 feet" class in the same Table. The vessels shown as registered for the community of Deltaville according to DGIF data are assumed to be a subset of the overall numbers of vessels in each of the waters proposed for NDZ.

Table 7. Estimated Vessel Population in the Deltaville Area
(estimates do not include vessels in boat yards for repair or prolonged storage >6months)

VESSEL LENGTH	TOTAL NUMBER OF VESSELS					
	Deltaville Registration	Broad Creek	Jackson Creek	Fishing Bay	Porpoise Cove	Moore Creek
Less than 16 feet	178	34	34	21	7	23
16 to 26 feet	331	73	72	46	15	49
27 to 40 feet	46	637	297	231	21	7
Over 40 feet	3	11	13	15	0	0
TOTAL	558	755	421	313	43	79

Sources: Va. Dept. of Game and Inland Fisheries Boater Registration Database, 2007.
U.S. Coast Guard Administration Division. Virginia Department of Health Marina Inspection Forms. VDH and DEQ Field reconnaissance of 02/12/2008.

The transient vessel information shown in Table 7 was used to assist in the estimation of the number of pump-outs and dump stations required for the three proposed NDZs based on the worksheet found in section 4.1.7 of the document "Protecting Coastal Waters from Vessel and Marina Discharges: A Guide for State and Local Officials. Volume I. Establishing No Discharge Areas under section 312 of the Clean Water Act" (USEPA, 1994). The numbers of transient boats are added after the peak occupancy rate since these are direct numbers launched at ramps daily.

Estimate of Required Pump-out Facilities for Broad Creek

Number of local vessels 27-40 feet in length = 637
Percent with holding tanks = 25% for Virginia.
Local vessels 27-40 feet with holding tanks: $(.25) \times (637)$ = 159
Number of local vessels over 40 feet in length = 11
Total number of local vessels with holding tanks = 170
Suggested default peak occupancy rate = 90% for Deltaville
Number of local vessels requiring pump-outs: $(.9) \times (170)$ = 153
Number of transient vessels 27-40 feet in length = 95
Transient vessels 27-40 feet with holding tanks: $(.25) \times (95)$ = 24
Number of transient vessels over 40 feet in length = 50
Total number of transient vessels with holding tanks = 74
Total number of transient vessels requiring pump-outs = 74
Total vessels requiring pump-outs: $= (74) + (153)$ = 227
Using the recommended four (4) vessels served per hour and using an average of twenty-one (21) hours of operation per marina per weekend, the number of vessels served per pump-out facility: $(21) \times (4) = 84$.

Pump-out facilities required in Broad Creek: $(227) / (84) = 3$ pump-out facilities required.

Estimation of Required Dump Stations:

Number of local vessels 16-26 feet in length = 166
Percent with portable toilets = 37% for Virginia.
Local vessels 16-26 feet with portable toilets: $(.37) \times (166)$ = 61
Suggested default peak occupancy rate = 90%
Local vessels requiring dump stations: $(.90) \times (61)$ = 55
Number of transient vessels 16-26 feet in length = 20
Transient vessels 16-26 feet with portable toilets: $(.37) \times (20)$ = 7
Total vessels requiring dump stations: $(55) + (7)$ = 62

Using the recommended twelve (12) vessels served per hour and using an average of twenty-one (21) hours of operation per marina per weekend, the number of vessels served per dump station: $(12) \times (21) = 252$.

Dump stations required in Broad Creek: $(62) / (252) = 1$ dump station required.

There are currently eleven (11) pump-out facilities and nine (9) dump stations in Broad Creek. Based on the above calculations, there are a sufficient number of pump-out facilities and dump stations at the marinas in Broad Creek to adequately service all marine sanitation needs. These facilities are easily accessible to all vessels in the Broad creek and the surrounding waters and provide safe sanitary wastewater removal and treatment. In addition to these stationary pump-out facilities, the VDH marina Program schedules visits to offer free mobile pump-outs during the summer months.

Estimate of Required Pump-out Facilities for Jackson Creek

Number of local vessels 27-40 feet in length = 297
Percent with holding tanks = 25% for Virginia.
Local vessels 27-40 feet with holding tanks: $(.25) \times (297)$ = 74
Number of local vessels over 40 feet in length = 13
Total number of local vessels with holding tanks = 87
Suggested default peak occupancy rate = 90%
Number of local vessels requiring pump-outs: $(.9) \times (87)$ = 78
Number of transient vessels 27-40 feet in length = 209
Transient vessels 27-40 feet with holding tanks: $(.25) \times (209)$ = 52
Number of transient vessels over 40 feet in length = 152
Total number of transient vessels with holding tanks = 204
Total number of transient vessels requiring pump-outs = 204
Total vessels requiring pump-outs: $= (78) + (204)$ = 282
Using the recommended four (4) vessels served per hour and using an average of twenty-one (21) hours of operation per marina per weekend, the number of vessels served per pump-out facility: $(21) \times (4) = 84$.

Pump-out facilities required in Jackson Creek: $(282) / (84) = 4$ **pump-out facilities required.**

Estimation of Required Dump Stations:

Number of local vessels 16-26 feet in length = 166
Percent with portable toilets = 37% for Virginia.
Local vessels 16-26 feet with portable toilets: $(.37) \times (166)$ = 61
Suggested default peak occupancy rate = 90%
Local vessels requiring dump stations: $(.9) \times (61)$ = 55
Number of transient vessels 16-26 feet in length = 20
Transient vessels 16-26 feet with portable toilets: $(.37) \times (20)$ = 7
Total vessels requiring dump stations: $(55) + (7) = 62$

Using the recommended twelve (12) vessels served per hour and using an average of twenty-one (21) hours of operation per marina per weekend, the number of vessels served per dump station: $(12) \times (21) = 252$.

Dump stations required in Jackson Creek: $(62) / (252) = 1$ **dump station required.**

There are currently six (6) pump-out facilities and three (3) dump stations in Jackson Creek. Based on the above calculations, there are a sufficient number of pump-out facilities and dump stations at the marinas in Jackson Creek to adequately service all marine sanitation needs. These facilities are easily accessible to all vessels in the Creek and adjacent waters to provide safe sanitary wastewater removal and treatment. In addition to these stationary pump-out facilities, the VDH marina Program schedules visits to offer free mobile pump-outs during the summer months.

Estimate of Required Pump-out Facilities for Fishing Bay and adjacent waters of Porpoise Cove and Moore Creek

Number of local vessels 27-40 feet in length = 259
Percent with holding tanks = 25% for Virginia.
Local vessels 27-40 feet with holding tanks: $(.25) \times (899)$ = 65
Number of local vessels over 40 feet in length = 15
Total number of local vessels with holding tanks = 80
Suggested default peak occupancy rate = 90%
Number of local vessels requiring pump-outs: $(.9) \times (80)$ = 72
Number of transient vessels 27-40 feet in length = 100
Transient vessels 27-40 feet with holding tanks: $(.25) \times (100)$ = 25
Number of transient vessels over 40 feet in length = 60
Total number of transient vessels with holding tanks = 60
Total number of transient vessels requiring pump-outs = 85
Total vessels requiring pump-outs: $= (72) + (85)$ = 157
Using the recommended four (4) vessels served per hour and using an average of twenty-one (21) hours of operation per marina per weekend, the number of vessels served per pump-out facility: $(21) \times (4) = 84$.

Pump-out facilities required in Fishing Bay, Porpoise Cove and Moore Creek: $(157) / (84) = 2$ **pump-out facilities required.**

Estimation of Required Dump Stations:

Number of local vessels 16-26 feet in length = 110
Percent with portable toilets = 37% for Virginia.
Local vessels 16-26 feet with portable toilets: $(.37) \times (110) = 41$
Suggested default peak occupancy rate = 90%
Local vessels requiring dump stations: $(.40) \times (2691)$ = 37
Number of transient vessels 16-26 feet in length = 100
Transient vessels 16-26 feet with portable toilets: $(.37) \times (100) = 37$
Total vessels requiring dump stations: $(37) + (37) = 74$

Using the recommended twelve (12) vessels served per hour and using an average of twenty-one (21) hours of operation per marina per weekend, the number of vessels served per dump station: $(12) \times (21) = 252$.

Dump stations required in Fishing Bay, Porpoise Cove and Moore Creek: $(74) / (252) = 1$ **dump station required.**

There are currently two (2) pump-out facilities and two (2) dump stations in Fishing Bay. A third pump-out facility is under contract for Fishing Bay and a fourth for Porpoise Cove. Based on the above calculations, there are a sufficient number of pump-out facilities and dump stations at the marinas in the waters in and around Fishing Bay River to adequately service all marine sanitation needs. These facilities are easily accessible to all vessels in the Fishing bay area and provide safe sanitary wastewater removal and treatment. In addition to these stationary pump-out facilities, the VDH marina Program schedules visits to offer free mobile pump-outs during the summer months.

ENFORCEMENT, SUPPORT, AND OUTREACH ACTIVITIES

State Regulations

Virginia State Water Control Law §62.1-44.33 addresses vessel discharges and provides authority for the State Water Control Board to adopt regulations controlling discharges from boats. This section of the law also provides that "Violation of such rules and regulations and violations of the prohibitions created by this section on the discharge of treated and untreated sewage from documented and undocumented boats and vessels shall, upon conviction, be a Class 1 misdemeanor. Every law-enforcement officer of this Commonwealth and its subdivisions shall have the authority to enforce the rules and regulations adopted and promulgated under the provisions of this section and to enforce the prohibitions on the discharge of treated and untreated sewage created by this section."

The current boating regulation that results from this authority is entitled "Regulations Governing the Discharge of Sewage and Other Wastes from Boats" (9 VAC 25-71). This regulation contains a section that addresses No Discharge Zones.

9 VAC 25-71-60. *No Discharge Zones.*

The following requirements apply in designated No Discharge Zones:

A. All discharge of sewage, whether treated or not, and other wastes from all vessels into designated No Discharge Zones is prohibited. A listing of designated No Discharge Zones within the state appears at 9 VAC 25-71-70.

B. Vessels without installed toilets shall dispose of any collected sewage from portable toilets or other containment devices at facilities approved by the Virginia Department of Health for collection of sewage wastes, or otherwise dispose of sewage in a manner that complies with state law.

C. Vessels with installed toilets shall have a marine sanitation device to allow sewage holding capacity unless the toilets are rendered inoperable.

D. Houseboats having installed toilets shall have a holding tank with the capability of collecting and holding sewage and disposing of collected sewage at a pump-out facility or other facility approved by the Virginia Department of Health for collection of sewage wastes; if a houseboat lacks such capability, the installed toilet shall be removed.

E. Y-valves, macerator pump valves, or any other through-hull fitting valves capable of allowing a discharge of sewage from marine sanitation devices shall be secured in the closed position by a device that is not readily removable, including, but not limited to, a numbered container seal, such that through-hull sewage discharge capability is rendered inoperable.

F. Every owner or operator of a marina within a designated No Discharge Zone shall notify boat patrons leasing slips of the sewage discharge restriction in the No Discharge Zone. As a minimum, notification shall consist of No Discharge Zone information in the slip rental contract and a sign indicating the area is a designated No Discharge Zone.

9 VAC 25-71-70. *Listing of Designated No Discharge Zones in the Commonwealth of Virginia.*

The following are designated No Discharge Zones:

A. A No Discharge Zone is hereby established for Smith Mountain Lake in the counties of Bedford, Franklin and Pittsylvania, Virginia, from Smith Mountain Dam (Gap of Smith Mountain) upstream to the 795.0 foot contour (normal pool elevation) in all tributaries, including waters to above the confluence with Back Creek in the Roanoke River arm, and to the Brooks Mill Bridge (Route 834) on the Blackwater River arm.

B. The Lynnhaven River Watershed in the City of Virginia Beach, Virginia, including all contiguous waters south of the Lesner Bridge at Lynnhaven Inlet (latitude 36°54'27.90" N and longitude 76°05'30.90" W) and north of the watershed break point at the intersection of West Neck Creek and Dam Neck Road (latitude 36°47'17.60" N and longitude 76°04'14.62" W).

Upon EPA approval of No Discharge Zones for the Broad Creek, Jackson Creek, Fishing Bay, Porpoise Cove and Moore Creek, these areas will be added to the list in section 70 of the regulation, and any law-officer of the Commonwealth will have the authority to enforce the requirements.

Local Enforcement Capability

In addition to the U.S. Coast Guard, the Virginia Marine Resource Commission Marine Patrol and the Virginia Department of Game and Inland Fisheries will be the state enforcing authority should these waters be deemed a NDZ. The U.S. Coast Guard Station at Milford Haven is directly south-south east across the Piankatank River from the Proposed no discharge zone for Fishing Bay. Additionally, both the Virginia Marine Resources Marine Patrol and the Department of Game and Inland Fisheries Game Wardens store and/or launch from facilities in Broad Creek and patrol the proposed waters. DEQ and the VDH-DSS are frequently in these waters to monitor for pollutants and can act as an auxiliary to the state and federal police functions. Various enforcement methods are under review including the use of NSF 60 fluorescent yellow/green dye tablets added to vessel holding tanks to detect illegal discharges. The dye tablets could be installed in holding tanks on a voluntary basis by marina operators and boaters as well as by those using pump out stations.

Local Public Support and Outreach

Local citizens, advocacy groups, and marina personnel are concerned about impacts from vessel sanitary discharges into Broad Creek, Jackson Creek and Fishing Bay. Seventeen (17) Marina owners and eighteen 18 citizens have written to the Department of Environmental Quality in support of establishing no discharge zones for these waters. A list of the Deltaville community supporters is provided in Appendix II. These designations also have the support of environmental interest represented by the Alliance for the Chesapeake Bay, as well as state agencies of the Commonwealth including the Virginia Department of Health, Virginia Marine Resources Commission, and the Virginia Department of Conservation and Recreation. In informal meetings with vessel operators, and at the public meeting, overall support for NDZ in these waters was communicated to DEQ staff.

Existing Point Source Pollution

The majority of land-based activities potentially contributing to bacteriological contamination of Broad and Jackson Creeks and Fishing Bay remain to be addressed by the community, state and county government. All of the waterfront homes in these waters are on individual or small community septic fields.

Several Virginia Pollution Elimination System (VPDES) permits are issued to marinas for storm water runoff and sanitary point source discharges via septic drain fields into the adjacent waters. Currently there are seven (7) marinas with VPDES sanitary waste water discharge permits for Broad Creek. None of the remaining waters in proposed NDZ areas have permitted sanitary discharges. Table 8 shows the VPDES permits for sanitary discharges. VPDES permitted industrial storm water discharges for the proposed NDZ waters are shown in Table 9.

Table 8. Facilities with Municipal Waste Water Permits

Facility Name	VPDES Permit Number	Receiving Water	Type of Discharge	Type of Permit
Bay Marine LTD	VA0087173	Broad Creek	Minor	Sanitary discharge
Doziers Marine Center	VA0087629	Broad Creek	Municipal Minor	Sanitary discharge
J & D Enterprises	VA0092169	Broad creek	Municipal Minor	Sanitary discharge
Miller Marine	VA0090913	Broad Creek	Municipal Minor	Sanitary discharge
Norview Marina	VA0087611 (not constructed)	Broad Creek	Municipal Minor	Sanitary discharge
Regatta Point Yacht Club	VA0090921	Broad Creek	Municipal Minor	Sanitary discharge
Kruses Stingray Harbor Marina	VA0087360	Broad Creek	(permit terminated by consent) Municipal Minor	Sanitary discharge
Stingray Harbor Marina	VA0087807	Broad Creek	(permit terminated by consent) Municipal Minor	Sanitary discharge
Jackson Creek Condominiums	VA0058327	Jackson Creek	(permit terminated by consent) Municipal Minor	Sanitary discharge
Green's Marina & Boatyard	VA0087602	Broad Creek	(permit terminated by consent) Municipal Minor	Sanitary discharge

Table 9. Facilities with Industrial Storm Water Permits

Facility Name	VPDES Permit Number	Receiving Water	Type of Discharge	Type of Permit
Chesapeake Marine Railway LLC	VA0091294	Fishing Bay	Industrial Minor	Storm water

Summary

The small tributaries to the Rappahannock and Piankatank Rivers that are the subject of this application are exceptional state resources that are in need of greater water quality protection than the current applicable Federal standard affords specifically due to their high utilization by recreational vessels, significant finfish and shellfish resources, and direct public contact with the affected waters. There exist an adequate number of pump-out facilities and dump stations in Broad Creek, Jackson Creek, Fishing Bay and vicinity to serve the boating vessel population, provide for the proper disposal and treatment of collected wastes, and protect water quality. Enforcement and public outreach can be provided by the U.S. Coast Guard Facility at Milford Haven on the south shore of the Piankatank River, the Virginia Marine Patrol the Department of Game and Inland Fisheries game wardens, the Department of Environmental Quality and the Virginia Department of Health. The Commonwealth of Virginia believes that due to the strong desire of the citizens of the Deltaville community, Marina owners and operators, as well as vessel operators in the waters of Broad Creek, Jackson Creek, Fishing Bay and vicinity waters are excellent candidates for designation as a Vessel No Discharge Zones.

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Virginia Department of Health Division of Wastewater Engineering, Marina Program www.vamarinas.net.

Virginia Secretary of Natural Resources. Chesapeake Bay and Virginia Waters Clean-up Plan. February 2007.

Appendix I

BOVA Code	Status*	Tier**	Common Name	Scientific Name	Confirmed	Database(s)
10031	FESE	I	Sturgeon, shortnose	Acipenser brevirostrum		BOVA
30074	FESE		Turtle, Kemp's (= Atlantic) Ridley sea	Lepidochelys kempii		BOVA
30071	FTST	I	Turtle, loggerhead sea	Caretta caretta	Yes	Collections,BOVA
30072	FTST		Turtle, green sea	Chelonia mydas		BOVA
40129	ST	I	Sandpiper, upland	Bartramia longicauda		BOVA
40093	ST	II	Eagle, bald	Haliaeetus leucocephalus	Yes	Collections,BOVA
40110	FS	I	Rail, black	Laterallus jamaicensis		BOVA
10032	FSSS	II	Sturgeon, Atlantic	Acipenser oxyrinchus	Yes	Collections,BOVA
30067	FSCC	II	Terrapin, northern diamond-backed	Malaclemys terrapin terrapin		BOVA
40029	SS	II	Heron, little blue	Egretta caerulea caerulea		BOVA
40186	SS	II	Tern, least	Sterna antillarum	Yes	BBA,BOVA
40034	SS	III	Heron, tricolored	Egretta tricolor		BOVA
40040	SS	III	Ibis, glossy	Plegadis falcinellus		BOVA
40036	SS	III	Night-heron, yellow-crowned	Nyctanassa violacea violacea	Yes	BBA,BOVA
40180	SS	IV	Tern, Forster's	Sterna forsteri	Yes	BBA,BOVA
40032	SS		Egret, great	Ardea alba egretta		BOVA
40112	SS		Moorhen, common	Gallinula chloropus cachinnans		BOVA
40020	SS		Pelican, brown	Pelecanus occidentalis carolinensis		BOVA
40189	SS		Tern, Caspian	Sterna caspia		BOVA
40188	SS		Tern, sandwich	Sterna sandvicensis acuflavidus		BOVA

Appendix I Continued

BOVA Code	Status*	Tier**	Common Name	Scientific Name	Confirmed	Database(s)
40038		II	Bittern, American	Botaurus lentiginosus		BOVA
40052		II	Duck, American black	Anas rubripes		BOVA
40114		II	Oystercatcher, American	Haematopus palliatus		BOVA
40105		II	Rail, king	Rallus elegans		BOVA
40187		II	Tern, royal	Sterna maxima maximus	Yes	BBA,BOVA
40037		III	Bittern, least	Ixobrychus exilis exilis		BOVA
40062		III	Redhead	Aythya americana		BOVA
40181		III	Tern, common	Sterna hirundo	Yes	BBA,BOVA
10038		IV	Alewife	Alosa pseudoharengus		BOVA
10131		IV	Eel, American	Anguilla rostrata		BOVA
10040		IV	Shad, American	Alosa sapidissima		BOVA
40142		IV	Dowitcher, short-billed	Limnodromus griseus		BOVA
40005		IV	Grebe, horned	Podiceps auritus		BOVA
40028		IV	Heron, green	Butorides virescens	Yes	BBA,BOVA
40106		IV	Rail, clapper	Rallus longirostris crepitans		BOVA
40107		IV	Rail, Virginia	Rallus limicola		BOVA
40065		IV	Scaup, greater	Aythya marila		BOVA
40332		IV	Waterthrush, Louisiana	Seiurus motacilla		BOVA
40140		IV	Woodcock, American	Scolopax minor		BOVA
40269		IV	Wren, marsh	Cistothorus palustris		BOVA
10168			Bass, striped	Morone saxatilis		BOVA
10045			Herring, blueback	Alosa aestivalis		BOVA
10143			Killifish, banded	Fundulus diaphanus		BOVA
10002			Lamprey, sea	Petromyzon marinus		BOVA
10129			Madtom, margined	Noturus insignis		BOVA
10408			Minnow, eastern silvery	Hybognathus regius		BOVA

Appendix I Continued

BOVA Code	Status*	Tier**	Common Name	Scientific Name	Confirmed	Database(s)
10148			Mosquitofish, eastern	Gambusia holbrooki		BOVA
10054			Mudminnow, eastern	Umbra pygmaea		BOVA
10163			Perch, pirate	Aphredoderus sayanus sayanus		BOVA
10041			Shad, gizzard	Dorosoma cepedianum		BOVA
30005			Skink, southeastern five-lined	Eumeces inexpectatus		BOVA
40068			Bufflehead	Bucephala albeola		BOVA
40064			Canvasback	Aythya valisineria		BOVA
40113			Coot, American	Fulica americana		BOVA
40024			Cormorant, double-crested	Phalacrocorax auritus	Yes	BBA,BOVA
40023			Cormorant, great	Phalacrocorax carbo		BOVA
40069			Duck, long-tailed	Clangula hyemalis		BOVA
40076			Duck, ruddy	Oxyura jamaicensis		BOVA
40061			Duck, wood	Aix sponsa		BOVA
40030			Egret, cattle	Bubulcus ibis		BOVA
40033			Egret, snowy	Egretta thula	Yes	BBA,BOVA
40053			Gadwall	Anas strepera		BOVA
40067			Goldeneye, common	Bucephala clangula americana		BOVA
40045			Goose, Canada	Branta canadensis		BOVA
40049			Goose, lesser snow	Chen caerulescens caerulescens		BOVA
40410			Goose, snow	Chen caerulescens		BOVA
40008			Grebe, pied-billed	Podilymbus podiceps		BOVA
40004			Grebe, red-necked	Podiceps grisegena		BOVA
40165			Gull, great black-backed	Larus marinus	Yes	BBA,BOVA
40167			Gull, herring	Larus argentatus	Yes	BBA,BOVA
40173			Gull, laughing	Larus atricilla	Yes	BBA,BOVA

Appendix I Continued

BOVA Code	Status*	Tier**	Common Name	Scientific Name	Confirmed	Database(s)
40170			Gull, ring-billed	Larus delawarensis		BOVA
40027			Heron, great blue	Ardea herodias herodias	Yes	BBA,CWB,BOVA
40119			Killdeer	Charadrius vociferus	Yes	BBA,BOVA
40220			Kingfisher, belted	Ceryle alcyon	Yes	BBA,BOVA
40001			Loon, common	Gavia immer		BOVA
40003			Loon, red-throated	Gavia stellata		BOVA
40051			Mallard	Anas platyrhynchos	Yes	BBA,BOVA
40078			Merganser, common	Mergus merganser americanus		BOVA
40077			Merganser, hooded	Lophodytes cucullatus		BOVA
40079			Merganser, red-breasted	Mergus serrator serrator		BOVA
40095			Osprey	Pandion haliaetus carolinensis	Yes	BBA,BOVA
40054			Pintail, northern	Anas acuta acuta		BOVA
40287			Pipit, American	Anthus rubescens		BOVA
40149			Sandpiper, least	Calidris minutilla		BOVA
40134			Sandpiper, spotted	Actitis macularia	Yes	BBA,BOVA
40066			Scaup, lesser	Aythya affinis		BOVA
40075			Scoter, black	Melanitta nigra americana		BOVA
40074			Scoter, surf	Melanitta perspicillata		BOVA
40060			Shoveler, northern	Anas clypeata		BOVA
40370			Siskin, pine	Carduelis pinus		BOVA
40141			Snipe, common	Gallinago gallinago		BOVA
40044			Swan, tundra	Cygnus columbianus columbianus		BOVA
40057			Teal, blue-winged	Anas discors orphna		BOVA
40056			Teal, green-winged	Anas crecca carolinensis		BOVA

Appendix I Continued

BOVA Code	Status*	Tier**	Common Name	Scientific Name	Confirmed	Database(s)
40331			Waterthrush, northern	Seiurus noveboracensis		BOVA
40059			Wigeon, American	Anas americana		BOVA
40058			Wigeon, Eurasian	Anas penelope		BOVA
40133			Willet	Catoptrophorus semipalmatus semipalmatus		BOVA
50042			Mink, common	Mustela vison mink		BOVA
50078			Rat, marsh rice	Oryzomys palustris palustris		BOVA
60025			Mussel, eastern elliptio	Elliptio complanata		BOVA
120026			Bottlenose, Atlantic	Tursiops truncatus	Yes	Collections

* FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed; FC=Federal Candidate; FS=Federal Species of Concern; SC=State Candidate; CC=Collection Concern; SS=State Special Concern

** I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need

Source: Virginia Department of Game and Inland Fisheries database

Appendix II

Impaired Waters	NDZ Interest (Written letter of support/request unless otherwise noted)		
	Government	Marina Owner	Citizens
1) Broad Creek (1 TMDL)	Middlesex County (original letter of support from 2003)	Ken and Carolyn Schmalenberger, Norton's Yacht Sales	Richard Urban
		Jeffrey Bliemel, Broad Creek Marina	Myra Cannon
2) Jackson Creek (2 TMDLs)		Rick Farinholt, Chesapeake Marine Railway LLC	Peggy Lewis
3) Fishing Bay (seasonal impairment)		Robert and Pamela Reiner, Chesapeake Cove Marina.	Elizabeth Meisel
		Reid Conley, Coastal Marine, Inc.	Thomas Blot
		Keith Ruse, Deltaville Marina and Deltaville Boatyard	Mary Gouldin
		Ron Hall, Fishing Bay Harbor Marina	Bette Harmon
		Onna Grimm, Jabez Marine, LLC T/A Deltaville Yachting Center and Chesapeake Yacht Sales	1) Bradford Lewis 2) Can't read the signature
		Eric Asaff, Norview Acquisitions, LLC (Norview Marina)	Tom and Marty Hawksworth
		Jack Dozier, Regatta Point Yachting Center	Tony Sciantarelli
		Jeff Schroeder, Schroeder Yacht Systems, LTD	James G. Reid Jr
		William Norton Jr., Timberneck Marina	Lud Kimbrough III
		Jack Dozier, Regatta Point Yachting Center	Nevin Ramsburg
		Don Walter PE, Walters Marina and Middlesex Marine Consulting, LLC	James Mackey III
		Jeff Schroeder, Schroeder Yacht Systems, LTD	Christine and Calvin Major
		Don Walter PE, Walters Marina and Middlesex Marine Consulting, LLC	C. Neal Gardner Jr.
		Mark Plakas, Walden Bros. Marina	Thomas Martin (verbal support)
		Gene Ruark, Ruark Marinas (verbal support)	
		Jim Rogers, Stingray Point Marina (verbal support)	

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